

lerning to teche thee first to knowe and worke with thyn owne instrument. Wherefor, when that the degree of thy sonne falleth bytwix two almikanteras, or elles yif thyn almikanteras ben graven with over gret a point of a compas (for bothe these thinges may causen error as wel in knowing of the tyd of the day as of the verrey assendent), thou most werken in this wyse. Set the degree of thy sonne upon the heyer almikanteras of bothe, and waite wel wher as thyn almury toucheth the bordure, and set ther a prikke of inke. Set down agayn the degree of thy sonne upon the nethere almikanteras of bothe, and set ther another prikke. Remewe thanne thyn almury in the bordure evene amiddes bothe prikkes, and this wol lede justly the degree of thy sonne to sitte bytwix bothe almikanteras in his right place. Ley thanne thy label over the degree of thy sonne; and find in the bordure the verrey tyde of the day or of the night. And as verreyly shaltow finde upon thyn est orisonte thyn assendent. And for more declaracioun, lo here thy figure.

6. To knowe the spring of the dawing and the ende of the evening, the which ben called the two crepusculis.

(Ad cognoscendum ortum solis et ejus occasum, que vocatur vulgariter crepusculum.)

SET the nadir of thy sonne upon 18 degrees of heighte among thyn almikanteras on the west syde, & ley thy label on the degree of thy sonne, and thanne shal the point of thy label schewe the spring of day. Also set the nadir of thy sonne upon 18 degrees of heighte among thyn almikanteras on the east side, and ley over thy label upon the degree of the sonne, and with the point of thy label find in the bordure the ende of the evening, that is, verrey night. The nadir of the sonne is thilke degree that is opposit to the degree of the sonne, in the seventh signe, as thus: every degree of Aries by ordre is nadir to every degree of Libra by ordre; and Taurus to Scorpion; Gemini to Sagittare; Cancer to Capricorne; Leo to Aquarie; Virgo to Pisces; and yif any degree in thy zodiak be dirk, his nadir shal declare him. And for the more declaracioun, lo here thy figure.

7. To knowe the arch of the day, that some folk callen the day artificial, from the sonne arysing til hit go to reste.

(Ad cognoscendum archum diei, quem vulgus vocat diem artificialem, in hoc, ab ortu solis usque ad occasum.)

SET the degree of thy sonne upon thyn est orisonte, & ley thy label on the degree of thy sonne, and at the point of thy label in the bordure set a prikke. Turn thanne thy riet aboute til the degree of the sonne sit upon the west orisonte, and ley thy label upon the same degree of the sonne, and at Rekne thanne the quantitee of tyme in the bordure bytwix bothe prikkes, and take the bordure under the orisonte is the arches, or every porcion, of whether that ing maistow see how longe that any sterre fix dwelleth above the erthe, fro tyme that he ryseth til he go to reste. But the day natural, that is to seyn 24 houres, is the revoluciuon of the equinoxial with as moche pre moevinge passeth in the mene whyle. And for the more declaracioun, lo here thy figure.

8. To turn the houres inequales in houres equales.

(Ad convertendum horas inequales in horas equales.)

KNOWE the nombre of the degrees in the houres inequales, and departe hem by 15, and take ther thyn houres equales. And for the more declaracioun, lo here thy figure.

9. To knowe the quantitee of the day vulgare, that is to seyn, from spring of the day unto verrey night.

(Ad cognoscendum quantitatem diei vulgaris, viz. ab ortu diei usque ad noctem.)

KNOWE the quantitee of thy crepusculis, as I have taught in the chapitre bifore, and adde hem to the arch of thy day artificial; and take ther the space of alle the hole day vulgare, unto verrey night. The same manere maystow worke, to knowe the quantitee of the vulgar night. And for the more declaracioun, lo here thy figure.

10. To knowe the quantitee of houres inequales by day.

(Ad cognoscendum horas inequales in die.)

UNDERSTOND wel, that these houres inequales ben cleped houres of planetes, & understond wel that somtyme ben they lengere by day than by night, and somtyme the contrarie. But understond wel, that evermo, generally, the hour inequal of the

day with the hour inequal of the night contene 30 degrees of the bordure, whiche bordure is evermo answering to the degrees of the equinoxial; wherfor departe the arch of the day artificial in 12, and take ther the quantitee of the hour inequal by day. And yif thou abate the quantitee of the hour inequal by daye out of 30, than shal the remenant that levethe performe the hour inequal by night. And for the more declaracioun, lo here the figure.

11. To knowe the quantitee of houres equales.

(Ad cognoscendum quantitatem horarum equalium.)

THE quantitee of houres equales, that is to seyn, the houres of the klokke, ben departed by 15 degrees already in the bordure of thyn Astrolabe, as wel by night as by day, generally for ever. What nedeth more declaracioun? Wherefor, when thee list to know how manye houres of the klokke ben passed, or any part of any of these houres or partie of houres ben to come, fro swich a tyme to swich a tyme, by day or by night, knowe the degree of thy sonne, and ley thy label on it; turne thy riet aboute joyntly with thy label, & with the point of it rekne in the bordure fro the sonne aryse unto the same place ther thou desirest, by day as by night. This conclusioun wol I declare in the laste chapitre of the 4 partie of this tretis so openly, that ther shal lakke no worde that nedeth to the declaracioun. And for the more declaracioun, lo here thy figure.

12. Special declaracioun of the houres of planetes.

(Specialis declaracio de horis planetarum.)

UNDERSTOND wel, that evermo, fro the arysing of the sonne til it go to reste, the nadir of the sonne shal shewe the hour of the planete, & fro that tyme forward at the night til the sonne aryse; than shal the verrey degree of the sonne shewe the hour of the planete. Ensample as thus. The 13 day of March fil upon a Saturday per aventure, and, at the arising of the sonne, I fond the secounde degree of Aries sitting upon myn est orisonte, albeit that it was but lite; than fond I the 2 degree of Libra, nadir of my sonne, descending on my west orisonte, upon which west orisonte every day generally, at the sonne arise, entreteth the hour of any planete, after which planete the day bereth his name; and endeth in the nexte stryk of the plate under the forseide west orisonte; & evere,

as the sonne climbeth uppere and uppere, so goth his nadir dounere and dounere, teching by swich strykes the houres of planetes by ordre as they sitten in the heavens. The first hour inequal of every Saturday is to Saturne; and the secounde, to Jupiter; the 3, to Mars; the 4, to the Sonne; the 5, to Venus; the 6, to Mercurius; the 7, to the Mone; and thanne agayn, the 8 is to Saturne; the 9, to Jupiter; the 10, to Mars; the 11, to the Sonne; the 12, to Venus; and now is my sonne gon to reste as for that Setterday. Channe sheweth the verrey degree of the sonne the hour of Mercurie entring under my west orisonte at eve; and next him succedeth the Mone; and so forth by ordre, planete after planete, in hour after hour, at the night longe til the sonne aryse. Now ryseth the sonne that Sunday by the morwe; and the nadir of the sonne, upon the west orisonte, sheweth me the entring of the hour of the forseide sonne. And in this maner succedeth planete under planete, fro Saturne unto the Mone, and fro the Mone up agayn to Saturne, hour after hour generally. And thus knowe I this conclusioun. And for the more declaracioun, lo here thy figure.

13. To knowe the altitude of the sonne in middes of the day, that is cleped the altitude meridian.

(Ad cognoscendum altitudinem solis in medio diei, que vocatur altitudo meridiana.)

SET the degree of the sonne upon the lyne meridional, & rikene how many degrees of almikanteras ben bytwix thyn est orisonte & the degree of the sonne. And take ther thyn altitude meridian; this is to seyne, the heyest of the sonne as for that day. So maystow knowe in the same lyne, the heyest cours that any sterre fix climbeth by night; this is to seyn, that whan any sterre fix is passed the lyne meridional, than byginneth it to descende, and so doth the sonne. And for the more declaracioun, lo here thy figure.

14. To knowe the degree of the sonne by thy riet, for a maner curiositee, &c.

(Ad cognoscendum gradum solis curiositee.)

EK bysily with thy rewle the heyest of the sonne in midde of the day; turne thanne thyn Astrolabe, & with a prikke of ink marke the nombre of that same altitude in the lyne meridional. Turne thanne thy riet aboute til thou fynde a degree of thy zodiak according with the prikke, this is to seyn, sittinge on the prikke; and in sooth, thou shalt finde but two degrees in al the zodiak